

# The First Persistent Infrastructure Identities Have Been Issued

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Across the built environment, infrastructure systems generate large volumes of data throughout their lifecycle. Design documentation, construction records, inspection reports, maintenance activities, repair histories, and risk documentation accumulate over decades of asset operation.

Yet despite the growing digitization of infrastructure systems, the physical assets themselves rarely maintain a persistent identity across the many organizations and platforms that record this information.

As infrastructure assets change ownership, service providers, and software systems, lifecycle records often become fragmented across disconnected environments.

This structural challenge is what we describe as the Infrastructure Identity Gap.

To address this issue, UMIP Inc. developed a framework called Persistent Infrastructure Identity (PIID).

## Infrastructure Needs a Persistent Identity Layer

Many industries have solved similar continuity problems through persistent identity systems.

Examples include:

- Vehicle Identification Numbers used to track automobiles throughout their lifecycle
- Financial identifiers used to identify securities across markets
- Domain registries used to manage internet infrastructure

In each case, the asset itself maintains a stable identity that remains constant even as ownership, service providers, or systems change.

The PIID framework applies this same principle to physical infrastructure.

Each infrastructure asset is assigned a Persistent Infrastructure Identity, creating a stable digital identity reference that allows lifecycle records to remain associated with the same physical asset across time.

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## **The UMIP Infrastructure Identity Registry**

The Unified Modular Infrastructure Platform (UMIP) was created to operationalize the PIID framework.

UMIP functions as a neutral infrastructure identity registry, issuing persistent identifiers for infrastructure assets and enabling lifecycle documentation to accumulate under those identifiers.

Once issued, a PIID becomes the permanent identity of the asset.

Lifecycle records, including inspections, maintenance events, engineering documentation, risk mitigation upgrades, and other infrastructure records, can then be associated with that identifier over time.

This creates a longitudinal infrastructure history for the asset.

## **The First PIIDs Have Now Been Issued**

UMIP has now issued the first Persistent Infrastructure Identities through the infrastructure identity registry.

Each PIID follows a structured identifier format incorporating geographic reference elements such as country, state, city, and county, helping anchor the identity to the physical infrastructure asset it represents.

An example identifier format is:

PIID-US-TX-DAL-085-000001

Once issued, the identifier remains permanently associated with the infrastructure asset and cannot be modified, deleted, or reassigned.

Ownership changes do not affect the asset's identity.

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## **Why Persistent Infrastructure Identity Matters**

Establishing a persistent identity layer for infrastructure creates new opportunities to improve lifecycle transparency across the built environment.

For infrastructure owners, operators, insurers, and engineering teams, persistent asset identity can support:

- improved continuity of infrastructure records
- clearer verification of maintenance and upgrades
- stronger documentation across ownership transitions
- more transparent risk evaluation
- reduced fragmentation of infrastructure lifecycle data

Rather than relying on records scattered across organizations and systems, infrastructure stakeholders can reference a stable asset identity across the lifecycle of the asset.

## **The Beginning of Infrastructure Identity**

The issuance of the first PIIDs represents an early step toward establishing a persistent identity layer for the built environment.

As infrastructure systems continue to digitize, the ability to maintain consistent identity references for physical assets will become increasingly important.

The UMIP registry provides the foundation for this identity layer.

Over time, additional infrastructure assets may be registered through pilot programs, institutional collaboration, and broader participation across the built environment.

Persistent Infrastructure Identity is designed to support a future in which buildings and infrastructure assets can maintain a continuous digital history throughout their lifecycle.

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